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ENERGY SERVICES

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July 24, 2006

Bill Storm
Minnesota Department of Commerce- Energy Facility Permitting
658 Cedar Street, Room 300
St. Paul, Minnesota 55155

Re: Modification to Faribault Energy Park Air Permit (Permit No. 13100071-002)

Dear Mr. Storm:

In response to a request made to Mick Durham of Stanley Consultants, the following information is being provided regarding the major air permit amendment for Faribault Energy Park (FEP). Minnesota Municipal Power Agency (MMPA) would like your confirmation that a modification to FEP's site permit is not required

Construction of the heat recovery steam generator has begun for FEP, as outlined in its site permit. Because of this, FEP's air permit will need to be modified. Explanations of modifications and their effect on emissions can be found below. Additionally, a statement is provided by MMPA explaining why they believe a site permit amendment is not required.

Modifications For Combined Cycle Operation

1. **Specify the GE 7FA combustion turbine (CT)-** FEP was originally permitted to operate a Mitsubishi 501F CT in simple and combined cycle. When a GE 7FA CT was installed instead, an air permit amendment was requested. The Minnesota Pollution Control Agency (MPCA) responded by amending the permit to allow operation of the GE 7FA only in simple cycle . Because of this, a permit amendment is needed to allow operation of the GE 7FA in combined cycle.
2. **Install a duct burner-** A duct burner, which would be located in the heat recovery steam generator, was not included as part of the combined cycle system in the original permit application.
3. **Allow combustion of biomass oils-** Combustion of biomass oils was not considered until design for combined cycle operation commenced. Originally, only natural gas and fuel oil were permitted.
4. **Increase size of emergency diesel generator from 500 kW to 1750 kW-** An increase in emergency diesel generator size was requested in order to match increased plant load in combined cycle.

5. **Increase stack heights-** Through the engineering and design process, modifications to building arrangements were made, affecting the HRSG and Auxiliary Boiler stack heights.

Effect on Emissions

1. **Specify the GE 7FA combustion turbine (CT)-** Because the Mitsubishi 501F and GE7FA combustion turbines are similar, heat input and emission limits are comparable. A table detailing the emission limits for the two turbines is attached.
2. **Install a duct burner-** The duct burner, which will run on natural gas, fuel oil, and biomass oils, marginally increases emission rates above the emission rates for combined cycle operation. A table of emission limits for the duct burner is attached.
3. **Allow combustion of biomass oils-** Biomass oils were assumed to have lower emissions than fuel oil, though combustion data for biomass oils is scarce. Because of this lack of information, a request was made for identical emission limits for biomass and fuel oil.
4. **Increase size of emergency diesel generator from 500 kW to 1750 kW-** Because of the increased size of the emergency diesel generator, emission rates will also increase. Because the emergency diesel generator is used for backup power, emissions impacts will be negligible.
5. **Increase stack heights-** The increase in height of the HRSG stack (the main source of emissions in the plant) improves the dispersive characteristics of the plant. The decrease in height of the auxiliary boiler will decrease its dispersive characteristics. Overall, there will be a negligible impact on emissions.

Site Permit Amendment Requirements

According to Minnesota Rules Section 4400.0650, site permit amendments are not required if a large electric power generating plant does not increase its capacity more than 10 % or a 100 MW, whichever is greater. Because the nominal 30 MW duct burners increase the efficiency of the plant and do not meet the aforementioned threshold, Avant Energy Services believes a site permit amendment is not required.

Additional Information

A copy of the air permit, as well as any additional information, can be provided upon request. If you concur with our conclusion, please send a letter to Marshall Cole at the MPCA affirming that there is no need for a site permit modification. Mr. Cole's contact information can be found below.

Marshall Cole
Air Quality Permits Section
Minnesota Pollution Control Agency
18 Wood Lake Drive SE
Rochester, MN 55904
Phone: 507-280-2992
Fax: 507-280-5513
E-mail: marshall.cole@pca.state.mn.us

If you have any questions feel free to call me at (612) 252-6526.

Very truly yours,

Avant Energy Services

Randy Porter

Enclosure

Table 2-2 - Analysis of Emission Limits - Natural Gas

Pollutant	Existing Permit Limits	Mitsubishi Provided Emission Rates	GE Provided Emission Rates	Proposed Permit Limits
NO_X	3.0 ppmvd @ 15%0_2	3.0 ppmvd @ 15%0_2	3.0 ppmvd @ 15%0_2	3.0 ppmvd @ 15%0_2
CO	10.0 ppmvd @ 15%0_2	10.0 ppmvd @ 15%0_2	9.0 ppmvd	9.0 ppmvd
SO_2	Natural gas fuel with 0.8 gr Sulfur/100 scf (.00227 lb/MMBtu)	Fuel derived emission limit; no vendor guarantee	Fuel derived emission limit: no vendor guarantee	Natural gas fuel with 0.8 gr S/100 scf (.00227 lb/MMBtu)
VOC or Unburned Hydrocarbons (UHC)	1.0 ppmvd at 15% 0_2 as methane	1.0 ppmvd	7.0 ppmvw UHC 1.4 ppmvw VOC (not guaranteed for this project)	1.5 ppmvd @ 15%0_2
PM/PM_{10}	0.01 lb/MMBtu	0.01 lb/MMBtu on fuel input basis	7 lb/hr Filterable Portion Only	0.01 lb/MMBtu on fuel heat input basis

Table 2-3 - Analysis of Emission Limits - Fuel Oil

Pollutant	Existing Permit Limits	Mitsubishi Provided Emission Rates	GE Provided Emission Rates	Proposed Permit Limits
NO_X	6.0 ppmvd @ 15%0_2	6.0 ppmvd @ 15%0_2	6.0 ppmvd @ 15%0_2	6.0 ppmvd
CO	10.0 ppmvd @ 15%0_2	10.0 ppmvd @ 15%0_2	20.0 ppmvd	20.0 ppmvd
SO_2	0.051 lb/MMBTU fuel heat input basis	Fuel derived emission, no vendor guarantee	Fuel derived emission, no vendor guarantee	0.051 lb/MMBTU fuel heat input basis
VOC or Unburned Hydrocarbons (UHC)	5.0 ppmvd @ 15%0_2	5.0 ppmvd @ 15%0_2	7.0 ppmvw UHC 3.5 ppmvw VOC (not guaranteed for this project)	3.5 ppmvd VOC @ 15%0_2
PM/PM_{10}	0.03 lb/MMBtu (based on BACT analysis)	0.08 lb/MMBtu on fuel input basis	17 lb/hr Filterable Portion Only	0.03 lb/MMBtu/hr on fuel heat input basis

Table 2-6 Proposed Emission Limits for the GE 7FA with Duct Burners

	GE 7FA CT - Natural Gas Uncontrolled Emission Rate			GE 7FA CT - Fuel Oil Uncontrolled Emission Rate	
Pollutant	GE 7FA without Duct Firing	GE 7FA with Duct Firing NG	GE 7FA with Duct Firing FO	GE 7FA without Duct Firing	GE 7FA with Duct Firing FO
NO_X	3.0 ppmvd	3.0 ppmvd	4.5 ppmvd	6.0 ppmvd	6.0 ppmvd
CO	9.0 ppmvd	11.0 ppmvd	11.0 ppmvd	20.0 ppmvd	23.0 ppmvd
SO_2	0.8 gr S/100 scf (0.00227 lb/MMBtu)	0.8 gr S/100 scf (0.00227 lb/MMBtu)	0.8 gr S/100 scf, 0.05% S (0.005lb/MMBtu)	0.05% S, 0.051 lb/MMBtu	0.05% S, 0.051 lb/MMBtu
VOC	1.5 ppmvd	3.0 ppmvd	3.0 ppmvd	3.5 ppmvd	3.5 ppmvd
PM/PM_{10}	0.01 lb/MMBtu	0.01 lb/MMBtu	0.015 lb/MMBtu on	0.03 lb/MMBtu/hr	0.03 lb/MMBtu/hr

Notes: All emissions concentrations (ppmvd) are corrected to 15% O_2 on a dry basis.
All normalized emissions (lb/MMBtu) are calculated from the CT and, where applicable, the combined heat input of the duct burner.
All limits, except SO_2 which is a fuel derived valued, are calculated over a 3-hr averaging period.